Department of Commerce • National Oceanic & Atmospheric Administration • National Weather Service

NATIONAL WEATHER SERVICE INSTRUCTION 80-601

October 28, 2004

Science and Technology

Research and Analysis

BUSINESS CASE ANALYSIS

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OPR: W/OST11 (L. Stang) **Certified by:** W/OST1 (F. Kelly)
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SUMMARY OF REVISIONS: None. This is the initial issuance.

SUMMARY: This instruction defines the elements of a business case analysis (BCA). A BCA is needed to define and justify investments in alternative solutions that support the NWS Strategic Plan and mission, satisfy operational requirements, and provide a return on investment that is equal to or better than alternative uses of funding. This instruction also identifies the need for documentation of the appropriate results of a resources and analysis effort.

Signed by October 14, 2004
John L. Hayes Date
Director, Office of Science
and Technology

Business Case Analysis

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Business Case Analysis

1. Introduction. A business case analysis (BCA) is a critical element in demonstrating to NWS, National Oceanic and Atmospheric Administration (NOAA), and Department of Commerce management that a program is a prudent investment and will support and enhance the NWS's ability to meet current and planned demand for its products and services. The BCA assists NWS program managers and management in meeting programmatic and budgetary review requirements. The BCA will also articulate the business case for alternative solutions, identify costs, scope, schedule, and risks early in the lifecycle, before funds are spent, and facilitates obtaining of approval and funding to proceed with development.

2. Purpose and Scope. This instruction specifies the components of a business case analysis. Each program should develop a business case that demonstrates program spending supports the NOAA Strategic Plan and NWS mission and will provide a return on investment that is equal to or better than alternative uses of funding. This instruction implements NWS Policy Directive 80-6, Research and Analysis for Improving Operations and Services, and supports the NWS Operations and Services Improvement Process (OSIP).

2.1 A BCA is prepared to:

a. Justify funding requests in order to demonstrate satisfaction of NWS requirements

b. Present the proposed system in a favorable, but realistic, light with respect to budgets, schedule, alignment with the NWS mission, and compliance with the NWS Information Technology architecture

c. Document the results of the research and analysis phase that are applicable to the development of a project plan for operational development and requirements specification, all of which should support the NWS OSIP

3. Program Product Standards. This section defines the standard template for a BCA. Each subsection below defines a BCA component, which typically follows the format of and content contained in an Exhibit 300 (Capital Asset Plan and Business Case) or similar document. Each subsection of the BCA template should be completed to the maximum extent practical or possible.

The BCA is intended to be the culminating document, in conjunction with a requirements specification and operational development project plan, for evaluation by the OSIP standing committee for approval to move into the operational development phase of the OSIP. The BCA will consist of the following subsections:

3.1 Project/Investment Description. Introduce the proposed solution and present an overview of the proposal's functionality in this section. Define the system goals and objectives, and state how they align with the NOAA/NWS goals and objectives. List all assumptions concerning the

proposed solution and its implementation, including scope, schedule, workload, dependencies, technology, growth, interfaces, and list the external factors or constraints, including time, budget, organizational structure, legislation, and physical factors.

3.2 Justification. Describe how this investment meets the NWS mission, strategic goals and objectives, and how it reduces costs or improves efficiencies; identify customers and stakeholders, alternative sources that could perform this function, and agencies and organizations affected by this initiative, if applicable. Indicate alternative sources in the private sector that could perform this function, and, if applicable, why none of those alternatives was not selected.

3.3 Performance Goals and Measures. Provide performance goals and measures and link them to the NWS mission, strategic and performance goals, and actual and performance improvements. The goals must be clearly measurable investment outcomes, and, if applicable, investment outputs.

3.4 Current State Assessment. Present the concept of operations for the current system in this section. Include a discussion of the current workload, customers and stakeholders, as well as shortcomings of the current operations. Include a summary of the requirements.

3.5 Future State Assessment. Describe the proposed solution and include expected workload and growth, future customers and stakeholders, and a concept of operations in this section. Include a description of how the proposed solution will meet the requirements stated in section 3.4.

3.6 Program/Project (Investment) Management. Describe the experience, training, education, organizational and support structure, and capabilities of the program or project management team in this section.

3.7 Alternatives and Cost/Benefit Analysis. Describe alternatives for the proposed solution from a technical, programmatic, compliance, and management perspective in this section. Identify the evaluation criteria and at least three alternatives. Provide an estimate of the life cycle costs, including resources, maintenance, and sustainability. Identify the benefit of the proposed solution and estimate their value or benefit. Provide comparisons of the evaluation for each alternative. Evaluate each alternative against the evaluation criteria and select the best choice.

3.8 Risk Inventory and Assessment. Describe the results of your risk assessment for this project, and discuss plans to eliminate, mitigate, or manage identified risks. Identify risks as: business, programmatic, technical, schedule, resource, or cost. Determine the probability of each risk occurring and describe the probable impact if the risk does occur. Identify a mitigation strategy for each risk, with milestones and completion dates. Risk assessments must include the schedule, initial costs, life-cycle costs, technical obsolescence, feasibility, reliability of systems, dependencies and interoperability between this investment and others, surety (asset protection) considerations, risk of creating monopoly for future procurements, capability of the agency to manage this investment, and overall risk of investment failure.

3.9 Acquisition Strategy. Describe how to accomplish the acquisition of resources, including possible contractor support, and the need for development and operational sites in this section. Describe the expected performance evaluation methodology, such as an incentive fee. Discuss how Section 508 compliance will be ensured.

3.10 Project Lifecycle Schedule and Funding Plan. Identify major activities and milestones, funding sources, and address possible contract delivery and reporting requirements in this section. Identify dependencies and the critical path. Demonstrate use of Earned Value Management System that meets ANSI-EIA-748-98, for both government and contractor costs, for those parts of the total investment that require development efforts, and show how close the investment is to meeting the approved cost, schedule, and performance goals.

3.11 Enterprise Architecture (EA). Identify how the proposed system conforms to the NWS EA and capital planning and investment control processes in this section. Describe the relationship between the investment and the business, data, application, and the technology layers of the EA.

3.12 Security and Privacy. Describe the security and privacy processes and planning efforts for this proposal in this section. All investments should demonstrate up-to-date security plans and be fully certified and accredited before becoming operational. Include the current and projected security costs, security performance gaps, and how such funding will close the performance gaps. The NWS must demonstrate that they have fully considered privacy in the context of this investment. The NWS must comply with Section 208 of the E-government Act and, in appropriate circumstances, conduct a privacy impact assessment that evaluates the privacy risks, alternatives, and protective measures implemented at each stage of the information life cycle.

3.13 Government Paperwork Elimination Act (GPEA). If this investment supports electronic transactions or record-keeping covered by GPEA, this section will briefly describe the transaction of record-keeping functions and how this investment relates to the NWS GPEA plan.

4. Responsibilities.

4.1 The Director, Office of Science and Technology (OST), and Office of Hydrological Development (OHD), as appropriate, will:

a. Lead the effort to develop and coordinate the BCA

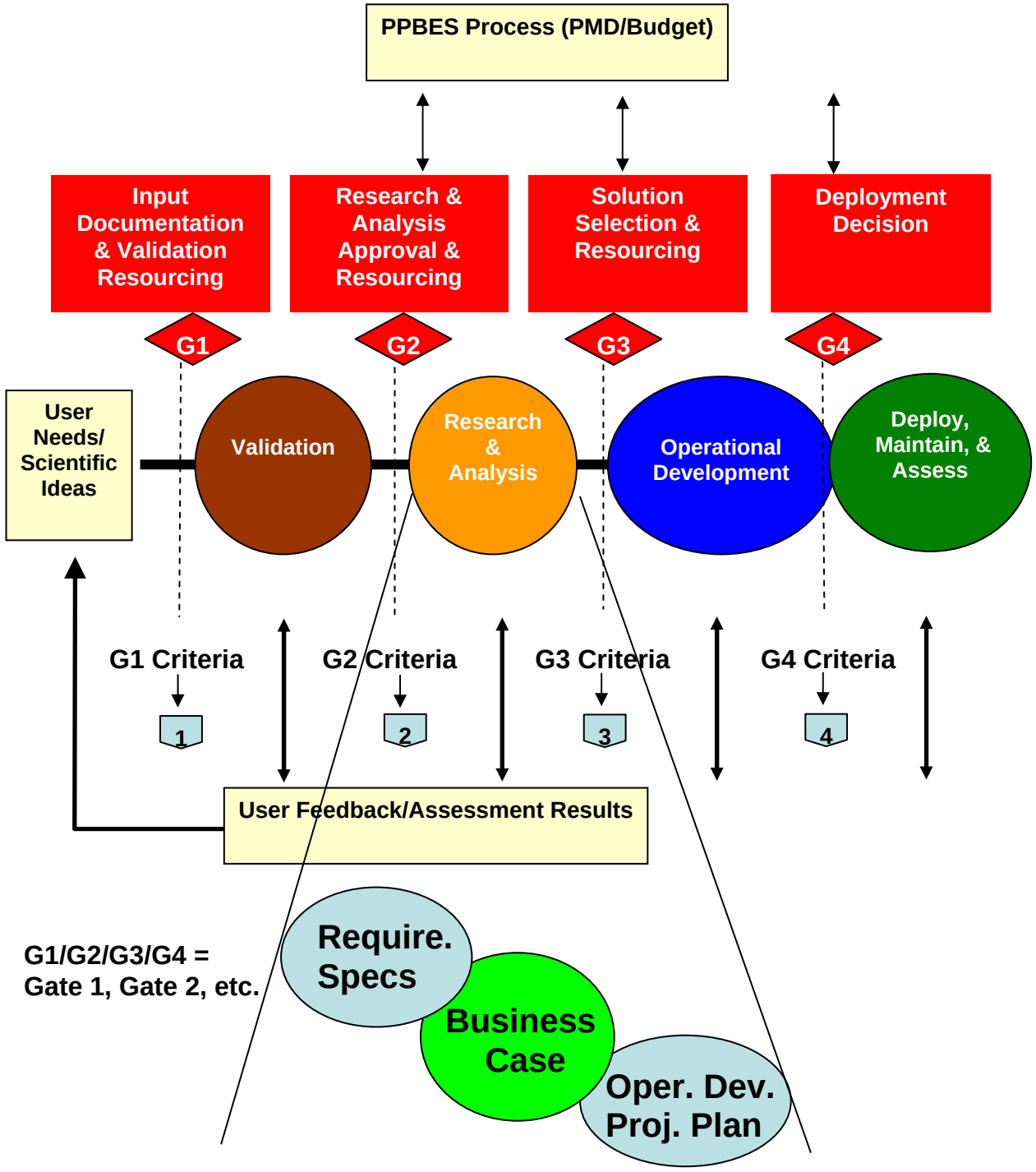
b. Coordinate with NWS headquarters offices and, when necessary or directed, with NOAA and the Department of Commerce, in developing the BCA

4.2 The Office of Climate, Water, and Weather Services, the Office of Operational Systems, the Office of the Chief Information Officer, the National Centers for Environmental Prediction, and Regions will coordinate with OST and OHD, as appropriate, in developing the BCA.

4.3 OSIP Gate Standing Committee: Verifies the BCA has been completed prior to proceeding into the operational development phase.

Appendix A – BCA and the OSIP

NWS Process for Operations and Services Improvement



Appendix B - References

1. OMB Circular A-11, Part 7, *Planning, Budgeting, Acquisition, and Management of Capital Assets*, July 2002
2. ANSI-EIA-748-1998, *Earned Value Management Systems*, May 1998
3. NWS Policy Directive 10-1, *Operations and Services Improvement Process (in process)*
4. NWS Policy Directive 30-1, *Systems Deployment, Maintenance, and Assessment*
5. NWS Policy Directive 80-1, *Acquisition Program Management*
6. NWS Policy Directive 80-3, *Systems Engineering*
7. NWS Policy Directive 80-4, *Science and Technology Planning and Programming*
8. NWS Policy Directive 80-5, *Science Review and Approval*
9. NWS Policy Directive 80-6, *Research and Analysis for Operations and Services Improvement*
10. NWS Policy Directive 80-8, *Development for Operations and Services Improvement*
11. NWS Instruction 80-602, *Operational Development Project Plan (in process)*
12. NWS Instruction 80-603, *Requirements Specification (in process)*